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CONTENTS

21 JUNE 1984

Next 1 Page(s) In Document Denied

25X1

USSR: DEVELOPMENT OF METAL-MATRIX COMPOSITES

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According to a recent item in the Soviet press, the Belorussian Academy of Sciences' Physical-Technical Institute has developed a continuous casting unit for obtaining aluminum-based composite materials.

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Comment:

Although many standard metals fabrication techniques can be applied to MMC, the fact that the Soviets have developed yet another--the casting unit--shows their continuing strong interest in MMC. The Soviets have a large metallurgical industry that can provide equipment and people trained in metallurgical techniques. By contrast, using organic composites requires retraining of people and the introduction of new equipment.

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MMCs also are of interest to the Soviets because of their inherent fatigue resistance, the conservation of materials that result from the improved composite properties, and the improvement in the high-temperature properties of the matrix metal. Despite the Soviet interest in MMC, no confirmed applications are known. According to Soviet scientists, the most researched MMC--boron-reinforced aluminum--has been used in aircraft fuselage ribs, stiffners, and main beams. According to a Soviet researcher, however, these were only test pieces.

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